

STREAM ECOLOGY OF THE GREATER YELLOWSTONE AREA

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Stream Ecology is a graduate-level course offered every fall term at Utah State University by Chuck Hawkins, Professor of Watershed Sciences (USU). The AMK Ranch serves as base camp for our annual 3-day class field trip to the Greater Yellowstone Area. The USU Stream Ecology course serves a diverse range of students including those specializing in freshwater ecology and fisheries as well as students in hydrology, fluvial geomorphology, water quality, environmental engineering, and general natural resources management.



The USU campus portion of the course is organized around weekly reading and discussion of primary literature that spans the breadth of topics in stream ecology: fluvial environments, evolution and adaptation in stream organisms, population ecology and regulation, community structure and organization, ecosystem processes, effects of human activity on streams, ecological assessment, and stream restoration. Our field trip occurs during the 2nd or 3rd week of term and serves several important purposes. First, it provides many students with their first exposure to stream environments and the biota that inhabit streams. Second, the diversity of stream and river ecosystems that occur in the Greater Yellowstone Area provides a fantastic opportunity to observe and talk about the many types of environmental gradients that occur across stream and river ecosystems and which influence their ecological structure and function. Third, the field trip allows me an opportunity to lecture in length in the field setting the stage for the more in depth discussions of topics we will have during the rest of the term.



During the field trip, the class visits 7-9 streams both within and outside of Grand Teton and Yellowstone National Parks including those in natural condition and some that have been heavily altered by land use activities. At each site we talk about the general physical nature of the stream and one or two specific topics. We also spend about an hour collecting benthic macroinvertebrates and then

discuss the specific cast of characters we observe at each site. Stream macroinvertebrates are very diverse at both local and regional scales and provide an excellent opportunity to discuss the relationships between the abundance and distribution of biota and their natural and human-altered environments. The field experience that our stay at the AMK Ranch facilities greatly enhance student learning.

